

REMARKS

A. Introduction

Claims 6-11, 13-18 and 20-26 were pending and under consideration. Claims 1-5, 12, and 19 were previously cancelled.

In the Office Action of October 15, 2008 ("the Office Action"), claims 6-11, 13-18 and 20-26 were rejected.

Without conceding to the merits of the rejections, the claims have been amended to clarify an aspect of the present general inventive concept. Claim 27 is new. No new matter has been added. Reconsideration and allowance of all the pending claims are requested.

B. Rejections under 35 U.S.C. §112

Claims 20-26 were rejected as being indefinite. Particularly, independent claims 20 and 25 were rejected for claiming both an apparatus and method steps.

In response, independent claims 20 and 25 have been amended in view of the Examiner's suggestion to more clearly distinguish the preamble from the claim body. Accordingly, reconsideration and withdrawal of these rejections are requested.

C. Rejections under 35 U.S.C. §102

Claims 6 and 11 were rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 5,587,596 to Chi. The rejections are traversed.

Independent claim 6 presently recites "voltage control unit to apply a variable substrate bias voltage to said well region dependent upon the read out of the signal charge by said readout section." The Examiner acknowledges that "an image sensor that applies a predetermined substrate voltage at all times" does not read on this language. See the Office Action, para. 5. Thus, because Chi applies a constant voltage and the present general inventive concept applies a variable voltage, as recited by independent claim 6, the present general inventive concept is not anticipated by Chi. Claim 11 depends from claim 6 and therefore includes all of the limitations of claim 6. Accordingly, claim 11 is not anticipated by Chi.

Claims 6, 7, and 11 were rejected under 35 U.S.C. §102(e) as anticipated by U.S. Patent No. 6,661,459 to Koizumi. The rejections are traversed for reasons similar to the above.

Independent claim 6 presently recites “voltage control unit to apply a variable substrate bias voltage to said well region dependent upon the read out of the signal charge by said readout section.” The Examiner acknowledges that “an image sensor that applies a predetermined substrate voltage at all times” does not read on this language. See the Office Action, para. 5. Further, the Examiner acknowledges that Koizumi applies a constant voltage. See the Office Action, page 10. Thus, because the present general inventive concept applies a variable voltage, as recited by independent claim 6, the present general inventive concept is not anticipated by Koizumi. Claims 7 and 11 depend from claim 6 and therefore include all of the limitations of claim 6. Accordingly, these dependent claims are not anticipated by Koizumi.

D. Rejections under 35 U.S.C. §103

Claims 13, 14, 18, 20, 21, 25, and 26 were rejected under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 6,661,459 to Koizumi in view of U.S. Patent No. 6,486,460 to Murakami. The rejections are traversed.

Independent claims 13, 20, and 25 presently recite, “a node connected to the photoelectric conversion element through the readout section, the node having a capacitance.” While the Examiner relies on Koizumi n-layer 104, this element is neither connected to a photoelectric conversion element through a readout section nor has a capacitance. Instead, the n-layer 104 is merely a layer that is used to form, along with other layers, a photodiode. See Koizumi Col. 5, lines 17-22. This layer is not the same as a “node” and is certainly not capable of having a capacitance.

Accordingly, independent claims 13, 20, and 25 are patentable over the art of record. Claims 14-18, 21-24, and 26 respectively depend from independent claims 13, 20, and 25, and therefore include all of the limitations of their respective independent claims. Accordingly, these dependent claims are also patentable over the art of record. At least claim 18 is dependent over the art of record for its own limitations as well as depending from claim 13.

Claim 18 recites, “a pixel transistor connected to said photoelectric conversion element through said node for converting the signal charge read out from said photoelectric conversion element into an electric signal and outputting the electric signal to a signal line.” While the Examiner relies on Koizumi n-layer 104, this layer is not capable of connecting a pixel transistor to the photoelectric conversion element because the n-layer 104 is merely a layer that is used to form, along with other layers, a photodiode. See Koizumi Col. 5, lines

17-22. This is not the same as a “node” and is certainly not capable of connecting elements.

Accordingly, claim 18 is patentable over the art of record for its own limitations as well as depending from claim 13.

E. New Claim

New claim 27 has been added. Support for the new claim can be found in the specification and drawings, for example, in paragraph 0082. New claim 27 recites features, which are not disclosed or suggested in the prior art of record.

Accordingly, it is respectfully submitted that new claim 27 does not present new matter and is allowable over the prior art of record, and allowance of this claim is earnestly solicited.

F. Conclusion

It is respectfully submitted that a full and complete response has been made to the outstanding Office Action and, as such, there being no other objections or rejections, this application is in condition for allowance, and a notice to this effect is earnestly solicited.

If any further fees are required in connection with the filing of this amendment, please charge the same to our Deposit Account No. 19-3140.

Respectfully submitted,
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